

Metal Seed Layer Deposition

Abstract

A method and structure for reducing the corrosion of the copper seed layer during the fabrication process of a semiconductor structure. Before the structure (or the wafer containing the structure) exits the vacuum environment of the sputter tool, the structure is warmed up to a temperature above the water condensation temperature of the environment outside the sputter tool. As a result, water vapor would not condense on the structure when the structure exits the sputter tool, and therefore, corrosion of the seed layer by the water vapor is prevented. Alternatively, a protective layer resistant to water vapor can be formed on top of the seed layer before the structure exits the sputter tool environment. In yet another alternative embodiment, the seed layer can comprises a copper alloy (such as with aluminum) which grows a protective layer resistant to water vapor upon exposure to water vapor.